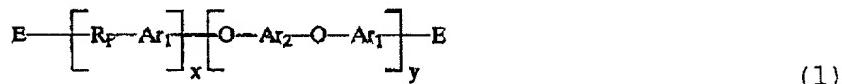


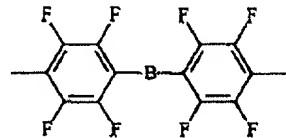
What is claimed is:

1. Fluorinated polyethers having a fluorinated aliphatic group at a main chain, which are represented by the following formula (1):

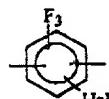
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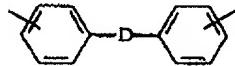
where R_F represents $\text{OCH}_2(\text{CF}_2)_n\text{CH}_2\text{O}$, or $\text{OCH}_2\text{CF}_2\text{O}(\text{CF}_2\text{CF}_2\text{O})_n\text{CF}_2\text{CH}_2\text{O}$, where n is a natural number ranging from 1 to 12;



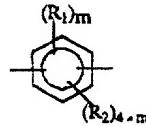
Ar_1 represents , where B is not present or a C=O group, or



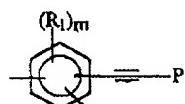
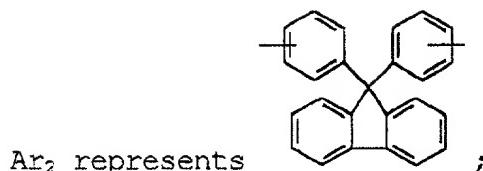
Ar_1 represents Hal , where Hal is one selected from F, Cl, Br and I;



Ar_2 represents , where D is one selected from -
15 $\text{C}(\text{CF}_3)_2$, $-\text{C}(\text{CH}_3)_2$, $-\text{CO}-$, $-\text{SO}_2-$, $-\text{O}-$ and $-\text{S}-$, or



Ar_2 represents , where R_1 and R_2 are the same or different and each independently represents a halogen atom selected from F, Cl, Br and I, and m is a natural number of 1-3, or



E represents H, or $(\text{R}_1)_m$, where P is H or a substituted or unsubstituted phenyl group;
 x is a number ranging from 0.1 to 1.0;
 y is $1.0 - x$.

2. The fluorinated polyethers of Claim 1, which has no an ethynyl group at an end.

3. The fluorinated polyethers of Claim 1, which has a thermosettable ethynylphenol or phenylethylnylphenol group at an end.

4. The fluorinated polyethers of Claim 1, in which R_f is a perfluoroalkyl group, and Ar_1 is a decafluorobiphenyl group.

5. The fluorinated polyethers of Claim 1, in which R_f is a perfluoroethylene oxide group, and Ar_1 is a decafluorobiphenyl group.

6. A waveguide type optical devices comprising a lower cladding layer formed on a flat substrate, a core layer formed on the lower cladding layer, and a upper cladding layer formed on the core layer, wherein the core and/or cladding layers are formed of the fluorinated polyether derivatives of Claim 1.